

1. (Currently Amended) An anastomosis device for use in coupling an end of a graft vessel to a side of a target vessel, the target vessel having an opening formed in a side wall thereof for insertion of the device, the anastomosis device comprising:

a graft vessel having an end portion;

a tubular member, at least a portion thereof being a coupling member attached to the graft vessel, the coupling member being radially compressible to a compressed state for insertion of the coupling tubular member and the end portion of the graft vessel into the opening of the target vessel, and the coupling member being positionable within the opening of the target vessel when the coupling member expands expandable from the compressed state to an expanded state, for engagement of the graft vessel with an inner surface of the target vessel after insertion of the tubular member into the opening in the side wall of the target vessel, the compressible portion of the tubular member having an inner surface and an outer surface defining a wall thickness therebetween, the wall thickness of the compressible portion in its compressed state being less than the wall thickness of the compressible portion in its expanded state.

2. (Currently Amended) The device of claim 1 wherein said coupling member compressible portion is self-expanding.

3. (Currently Amended) The device of claim 1, comprising a tubular member attached to the coupling member, and -wherein said tubular member further comprises a flexible tube.

4. (Original) The device of claim 3 wherein said flexible tube is made from an implantable biocompatible material.

5. (Original) The device of claim 4 wherein said biocompatible material comprises a plastic material.

6. (Currently Amended) The device of claim 3,4 wherein said tubular member further comprises a coil interposed between an inner and outer layer.

7. (Original) The device of claim 6 wherein said coil is formed from a biocompatible material.

8. (Original) The device of claim 7 wherein said biocompatible material is selected from a group consisting of stainless steel and nitinol.

9. (Original) The device of claim 7 wherein said biocompatible material is selected from a group consisting of plastic, polyurethane, and polycarbonate material.

10. (Original) The device of claim 6 wherein said inner and outer layers are formed from a low durometer plastic material.

11. (Original) The device of claim 10 wherein said plastic material is silicone.

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12. (Currently Amended) The device of claim 1 wherein said coupling member ~~compressible portion~~ is made from a biocompatible material.

13. (Original) The device of claim 12 wherein said biocompatible material comprises a non-metallic material.

14. (Original) The device of claim 13 wherein said non-metallic material comprises a foam material.

15. (Currently Amended) The device of claim ~~31~~ wherein said tubular member further comprises a flexible tube and wherein said coupling member ~~radially compressible portion comprises a coupling member surrounding~~ is disposed about the tube, the coupling member having an inside diameter of between about 10 to 30 percent smaller than an inside diameter of the tube.

16. (Currently Amended) The device of claim 1 wherein an outside diameter of the

coupling member ~~compressible portion~~ in its expanded state is between about 10 to 80 percent larger than an inside diameter of the target vessel.

17. (Original) The device of claim 1 wherein an inside diameter of the tubular member is between about 0.5 mm to 6.0 mm.

18. (Currently Amended) The device of claim 3, ~~1 further comprising the wherein the~~ graft vessel extends, ~~the vessel extending longitudinally through the tubular member,~~ and a free end of the graft vessel being everted over and coupled to at least a portion of the ~~radially compressible portion of the tubular coupling member.~~

19. (Currently Amended) The device of claim 18, wherein the graft vessel is coupled to the ~~graft coupling member~~ with one or more sutures.

20. (Original) The device of claim 1 further comprising an introducer having an outer diameter sized to permit insertion of the introducer through the opening in the side wall of the target vessel.

21. (Original) The device of claim 20 wherein the introducer has a groove formed in one end thereof through which a suture can be attached to the graft vessel and the tubular member.

22. (Original) The device of claim 21 wherein the introducer is configured to be pulled back and separated from the tubular member after the introducer is inserted at least partially into the target vessel through the opening in the side wall of the target vessel.

23. (Currently Amended) ~~The device of claim 1~~ An anastomosis device for use in coupling an end of a graft vessel to a side of a target vessel, the target vessel having an opening formed in a side wall thereof for insertion of the device, the device comprising a tubular member wherein the entire tubular member is radially compressible to a compressed state for insertion of the tubular member into the opening in the target vessel.

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and expandable from the compressed state to an expanded state for engagement of the graft vessel with an inner surface of the target vessel after insertion of the tubular member into the opening in the side wall of the target vessel, the compressible portion of the tubular member having an inner surface and an outer surface defining a wall thickness therebetween, the wall thickness of the compressible portion in its compressed state being less than the wall thickness of the compressible portion in its expanded state.

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31. ~~24~~ (Newly Added) The device of claim 1, wherein the graft vessel comprises one of an artery, a vein, and a synthetic graft.

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32. ~~25~~ (Newly Added) An anastomosis device for use in coupling an end of a graft vessel to a side of a target vessel, the target vessel having an opening formed in a side wall thereof for insertion of the device, the device comprising:

a tubular member having an inner layer and an outer layer, at least a portion thereof being radially compressible to a compressed state for insertion of the tubular member into the opening in the target vessel, and expandable from the compressed state to an expanded state for engagement of the graft vessel with an inner surface of the target vessel after insertion of the tubular member into the opening in the side wall of the target vessel, the compressible portion of the tubular member having an inner surface and an outer surface defining a wall thickness therebetween, the wall thickness of the compressible portion in its compressed state being less than the wall thickness of the compressible portion in its expanded state;

a coil interposed between the inner layer and the outer layer of the tubular member; and

wherein the inner layer and the outer layer are formed from a low durometer silicone.

33. ~~26~~ (Newly Added) An anastomosis device for use in coupling an end of a graft vessel to a side of a target vessel, the target vessel having an opening formed in a side wall thereof for insertion of the device, the device comprising

a tubular member, at least a portion thereof being radially compressible to a compressed state for insertion of the tubular member into the opening in the target vessel, and expandable from the compressed state to an expanded state for engagement of the graft vessel with an inner surface of the target vessel after insertion of the tubular member into the opening in the side wall of the target vessel, the compressible portion of the tubular member having an inner surface and an outer surface defining a wall thickness therebetween, the wall thickness of the compressible portion in its compressed state being less than the wall thickness of the compressible portion in its expanded state; and

wherein the tubular member further comprises a flexible tube and wherein the radially compressible portion comprises a coupling member surrounding the tube, the coupling member having an inside diameter of between about 10 to 30 percent smaller than an inside diameter of the tube.

³⁴27. (Newly Added) An anastomosis device for use in coupling an end of a graft vessel to a side of a target vessel, the target vessel having an opening formed in a side wall thereof for insertion of the device, the device comprising:

³⁴a tubular member, at least a portion thereof being radially compressible to a compressed state for insertion of the tubular member into the opening in the target vessel, and expandable from the compressed state to an expanded state for engagement of the graft vessel with an inner surface of the target vessel after insertion of the tubular member into the opening in the side wall of the target vessel, the compressible portion of the tubular member having an inner surface and an outer surface defining a wall thickness therebetween, the wall thickness of the compressible portion in its compressed state being less than the wall thickness of the compressible portion in its expanded state, and wherein the graft vessel may extend longitudinally through the tubular member, a free end of the graft vessel being everted over and coupled to at least a portion of the radially compressible portion of the tubular member.

³⁴³⁵28. (Newly Added) The device of claim 27, wherein the graft vessel is coupled to the radially compressible portion of the tubular member with one or more sutures.

36. 29. (Newly Added) An anastomosis device for use in coupling an end of a graft vessel to a side of a target vessel, the target vessel having an opening formed in a side wall thereof for insertion of the device, the device comprising:

a tubular member, at least a portion thereof being radially compressible to a compressed state for insertion of the tubular member into the opening in the target vessel, and expandable from the compressed state to an expanded state for engagement of the graft vessel with an inner surface of the target vessel after insertion of the tubular member into the opening in the side wall of the target vessel, the compressible portion of the tubular member having an inner surface and an outer surface defining a wall thickness therebetween, the wall thickness of the compressible portion in its compressed state being less than the wall thickness of the compressible portion in its expanded state; and

an introducer having an outer diameter sized to permit insertion of the introducer through the opening in the side wall of the target vessel, the introducer having a groove formed in one end through which a suture can be attached to the graft vessel and the tubular member.

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37. 30. (Newly Added) The device of claim 29, wherein the introducer is configured to be pulled back and separated from the tubular member after the introducer is inserted at least partially into the target vessel through the opening in the side wall of the target vessel.

38. 31. (Newly Added) A fastener for use in coupling a graft vessel to a side of a target vessel, the target vessel having an opening formed in a side wall thereof, the fastener comprising:

a graft vessel having an end portion;

a coupling member attached to the graft vessel, the coupling member being radially compressible to a compressed state for insertion of the coupling member and the end portion of the graft vessel into the opening of the target vessel, the coupling member being positionable within the opening of the target vessel when the coupling member expands from the compressed state to an expanded state.